

THE CONTINUING ROLE OF THE DOE DEPARTMENT STANDARDS COMMITTEE

Under the guidance of the *Criteria for the Department's Standards Program* (DOE/EH-0416) the Department Standards Committee (DSC) has evolved into a safety management systems laboratory that directly supports a number of the DOE Corporate Management Strategic Plan initiatives in order to ensure the Department meets its Strategic Goal:

AThe Department of Energy continuously demonstrates organizational excellence in its environment, safety and health practice, communications and trust efforts, and its corporate management systems and approaches.

The DSC is unique, among the DOE community of organizations in its comprehensive, cross-cutting approach to the examination and promotion of effective systems and practices that achieve excellence in the combined domains of performance-based contracting and standards-based integrated safety management.

Over 90% of DOE effort is provided by the private sector. As a result, the DSC's functioning is a distinctly entrepreneurial; one that responds to the emergent needs of DOE and contractor managers to systematize or increase the entire community's depth of knowledge regarding significant challenges that arise to the accomplishment of the diverse, complex and often highly uncertain DOE mission. As a result of the DSC's work, the effectiveness and efficiency of many DOE elements' ability to *Do Work Safely* has been dramatically enhanced.

Akin to an ombudsperson's, the DSC position within the DOE hierarchy is deliberately mobile. Through the adoption of projects that promote standards-based integrated safety management at every level within the DOE organizational framework - from support to the Under-Secretary and the Field Office Managers working group, to the endorsement of the *I Care/We Care* union workers safety initiative - The DSC marketplace of experiences provides a timely and expansive forum for enhancing vertical integration of the complex social ecology. The DSC supplements and compliments the work of formal line management structures within DOE.

Under the Assistant Secretary of Environment, Safety and Health as sponsor and chair, the DSC is self-directed and focuses primarily on topics of specific interest to work internal to the DOE. Participation in DSC activities is discretionary and participants fund their own involvement, an important sign of commitment and ownership in the results of its endeavors. However, the DSC also maintains cognizance of and informal dialogue with other agencies, regulatory domains, industries, and leading thinker/practioners in organizational effectiveness.

Under the leadership of Assistant Secretary O'Toole and the sponsorship of Secretary O'Leary, the DSC has developed a dynamic, adaptive, and standards-based perspective on safety management and consistent with the remainder of the DOE Strategic Plan, promotes a proactive position for DOE as a leading contributor to the understanding and practice of more fully integrated safety management for complex, high hazard or high uncertainty technological enterprises.

Questions and answers related to the Department Standards Committee.

A. In what sense does the Department Standards Committee function as a Asystems laboratory. @

It has been recognized by Committee members and others, for some time now, that the diversity, complexity, and uncommon degrees of uncertainty that are found in the DOE mission portfolio do not lend themselves to Aone size fits all@ management solutions. Equally it is understood that this recognition does not, and could not constitute license for complete improvisation in the development of work designs and their attendant safety plans. However, during earlier times of extreme secrecy about DOE activities (i.e. prior to the current decade) the highly restricted flow of information among the various DOE sites had in fact contributed to considerable variability among implementing standards and practices. This cultural phenomenon produced a legacy for operations in more open times, that presents challenges that are every bit as formidable as the physical waste and contamination legacy of the former Nuclear Weapons Complex.

DOE made extensive attempts, early in this decade, to institutionalize centrally controlled, detailed and standardized safety practices. These were often imported from regulatory domains for private and unclassified government operations. Most commonly used were US Nuclear Regulatory Commission and Occupational Safety and Health Administration requirements applied under a scheme of DOE self-regulation with allowance for application of a Agraded approach.@ With time, only partial success, and at great expense it was recognized that these readily available suites of standards, while often appropriate, were not sufficient sets of expectations to fully define safe work plans within the DOE facilities. It came to be understood that both the NRC and OSHA regulatory schemes for hazardous facilities place a great deal of dependence on the establishment and zealous preservation of specific and prescriptive protection schemes that are closely developed around the design of those facilities.

For a variety of reasons, many DOE hazardous facilities did not possess either an adequate characterization of existing hazards or a detailed and current mapping of the design basis for protection to existing engineered safety features. The importance of these feature to the achievement to the Agraded approach@ authorized in new DOE safety directives turned out to be crucial in numerous cases. The cost of achieving adequate compliance, even with the provision for Agraded approach@ in practice could not be effectively estimated. In addition, the release of many facilities from discontinued missions, and the local state and community eagerness to begin systematic cleanup of post-production sites and facilities, made the question; What degree of facility upgrade to contemporary Aindustry@ standards is appropriate?; a much more complex one than had been anticipated when standardization of safety directives had begun.

In the early part of the decade DOE Program Offices had directed substantial resources to the efforts to increase the standardization of site operations. Virtually every major site was involved in extensive efforts to determine compliance status with newly published DOE directives and to institute remedial actions for compliance discrepancies. A significant part of this effort involved creating of substantial and unprecedented levels of internal requirements management infrastructure. At many sites, progress toward comprehensive compliance evaluations was

delayed for the application of specific upgrades to key facilities, typically those with high visibility missions during the transitional period at the end of the Cold War.

By early 1994 there was growing and widespread dissatisfaction with the return on investment for many of the standardization efforts. After several years of operation under conditions of much greater community openness and external oversight, DOE and its site operators began to better understand the implications of using recognized standards as a tool for developing regulator and community trust in and acceptance of their operations. Importantly, DOE field organizations became more articulate about the extent to which formal standards had always governed certain of its operations. This realization began to permit examination of the extent to which work as defined within the DOE missions failed to satisfy some of the important initial conditions behind externally common standards. This in turn enabled a separation of the problem of historic loss of design basis conformance to consensus standards from those situations for which local standards, developed for unique situations, would always be appropriate.

The DSC came into existence at this time. Its charter was to rethink the basis for the application of standards in DOE and to provide an approach to standards-based operations that would account for DOE unique missions, permit safely tailoring aged-facility improvements to reflect just their remaining missions and limited hazard characterizations, while ensuring that for modern facilities with ongoing missions, that design, operations, and maintenance standards incorporated available best practices or represented case-specific solutions to unique problems of hazard control that reflected a degree of care and consideration that was comparable to best practices in other leading edge industries and government agencies.

The *Criteria for the Department's Standards Program* was the DSC's response to this challenge. In developing this standard the DSC was acutely aware of the diversity of DOE missions and thus sought to develop an approach that combined flexibility, rigor and robustness in the face of recurring uncertainty. It was recognized that to be successful, each step in the DOE decision-making chain from budget to hands-on work must appropriately account for the elements of complex uncertainty that presented themselves throughout the planning process. Thus for example, given the uncertainty in the budgets and priorities for facility deactivation work, project managers for specific activities in the current year must have the flexibility and the discipline to scope activities that are achievable strictly in light of what was already known and which would make real progress toward facility goals even when these activities might not seem optimum on a conventional planning horizon of several years.

From the many, many situations like this it was recognized that work design and safety requirements identification systems were needed that could be adapted widely. These systems must draw upon conventional knowledge (in consensus standards and regulations) for conventional hazards and supplemental controls for the resolution of Aas is@ uncertainty in hazards, protection features, or available resources. As a result of its work developing the *Criteria* the DSC came to believe that such systems could be developed, in part by systematic analysis of historic best practices used within the Department. This required incorporating the knowledge and experience of those most familiar with the work to be done; such involvement ensured flexibility of approach to unique local conditions.

A second, and equal requirement was that suitable rigor be introduced and that work plans have robustness proportionate to the unconventional uncertainty that workers must face during their execution. It is from this requirement that the challenge to develop local systems that were genuinely, and demonstrably standards-based arose. In recognition of the need to blend these two imperatives into a workable system the *N&S Closure Process* was developed. Like the *Criteria* it turned out that in order to provide the wide-spread utility desired and to preserve a standards-basis for adequacy of standards identified, the *N&S Closure Process* was required to be a performance-based standard and not a prescriptive one. The resulting process manual (M450.3-1) is full of attributes that local work design and standards identification process systems must tailor into the Aas is@ condition of their specific work. To achieve acceptance it is necessary that each application be demonstrative of its incorporation and satisfaction of those standard performance attributes.

In effect, the *N&S Closure Process* is a macro system from which individual local systems are spawned. In its role as oversight for the application of the process, the DSC has found it necessary to conduct extensive review of both the methods and the products of users of the process. From this experience training and mentoring opportunities have been identified. It is the engagement with the local systems for implementation of the *N&S Closure Process* that has given the DSC work the aspects of a systems laboratory. In the subsequent four years the Committee has conducted numerous reviews of applications and identified and pursued a number of spin off issues related to the subsequent implementation and maintenance of the products, now known as Work Smart Standards, that are developed from the applications of the *N&S Closure Process*. With the recent linkage in the DEAR of Work Smart Standards to Integrated Safety Management and thus to Performance Based Contracting, the Committee has many remaining opportunities for identification and evaluation of implementing systems for *Doing Work Safely*.

B. What is the relationship of the Department Standards Committee to the current initiative for institutionalizing Integrated Safety Management that is being coordinated by the Safety Management Implementation Team (SMIT)?

The SMIT is responsible to the Under-Secretary for facilitating implementation of the *Safety Management System Policy* (DOE P450.4) and its companion implementing requirements found in departmental procurement regulations (48 CFR (DEAR) 970.5204-2 and 5204-78). The SMIT has a specific charter that is described in the Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 95-2. DSC members were instrumental in the development of the Implementation Plan which reflects many of the concepts and approaches found in the *Criteria for the Department's Standards Program*. The SMIT is a temporary organization, working to a finite set of scheduled outcomes that represent the minimum initial actions needed to institutionalize the precepts of Integrated Safety Management (ISM) across the Department. The DSC has coordinated with the SMIT throughout the implementation period, taking direct responsibility for several action items in the overall plan.

The DSC has been responsible for maintenance and oversight of the *Necessary and Sufficient Closure Process*, a discretionary standard, approved under the DEAR, for use in selection of tailored, (Work Smart) sets of contract standards. Such standards comprise one leg of the ISM implementing framework for a specific contract. Implementation of these standards is through the

other two platform legs, a DOE-approved Integrated Safety Management Plan and a set of jointly agreed-upon performance measures. Numerous DOE sites have used the *N&S Closure Process* to identify standards for this purpose. The *Criteria for the Department's Standards Program* reflects expected characteristics for other aspects of the institutional mechanisms that implement ISM. The DSC will continue to monitor the application of ISM at those sites that have used the process and to adduce lessons learned regarding process adequacy for the implementation of standards-based integrated safety management.

C. What is the relationship of the Department Standards Committee to the various safety management functional programs within EH?

The EH functional organizations comprise the DOE Corporate Safety arm. The duties of EH include: the development of safety regulations; independent oversight and enforcement of DOE regulations and other standardized requirements to the extent invoked in contracts; and the development of guidance and discretionary initiatives intended to enhance environment, safety and health protection performance throughout the DOE community. The EH functional organizations provide a variety of infrastructure support activities including: development of operational safety statistics for the Department; investigation of significant accidents and incidents; and identification and promulgation of lessons learned from sources both within and outside DOE. Each of these functions is a standing activity, and within some activities specific short-term initiatives are developed and carried out.

Because of the wide variety of work, hazards and risks that comprise the DOE mission, the EH functional organizations are divided into a number of relatively specialty sections each with a substantial subset of the DOE community organizations that are accountable to the policy and requirements each section maintains. Traditionally these functional organizations within EH have relied upon oversight reports, contractor self-reporting and incident investigations to provide data from which to assess the effectiveness of the requirements and guidance documents they have promulgated. In some instances, but not all, EH management has met with counterparts from other Program Offices to conduct a collective assessment of ES&H performance. Within the context of the ISM core functions, these sources of data were relied upon to provide Feedback for Improvement in EH activities.

The DSC can be thought of as a users group in relation to the various safety management functional programs within EH. Since its inception, the DSC has provided an additional forum for feedback to EH; one that permits more extensive treatment of systemic issues and which through cross-cutting dialogue has led to more dependable corrective actions. Two specific advantages of the DSC are that feedback and lessons learned presented to the Committee can be evaluated by virtually all Program Office and Field Management perspectives simultaneously, and the mechanism for presentations to the Committee has provided the opportunity for senior contractor managers to provide and share among themselves perspective on the impact of various ES&H initiatives.

D. What is the relationship of the Department Standards Committee to the principal DOE Program Offices, to the Field Office Managers working group and to forums involving senior executives of the Department's laboratories and other site operating contractors?

The membership of the DSC is limited to DOE managers. Each Program Office and Field Office organization is provided with representation on the Committee. Participation of these elements

varies with time and with respect to issues under consideration. Quorum requirements have been satisfied at 30 consecutive meetings since May 1994. By charter the DSC provides policy advice to senior DOE management, typically this has been to the Secretary or Under-Secretary depending upon the subject matter. Committee members are responsible for keeping their principals informed of DSC activities. Throughout its existence, the DSC has drawn upon the knowledge and experience of the primary DOE contractors and their organizations for technical support, and for the operational base upon which much of the Committee's work of systems analysis has been performed. Contractor representatives, including senior management representatives routinely participate in DSC meetings and in the work of its task and working groups.

This structure is implemented as follows. Typically, departmental cross-cutting issues of safety significance have been identified by groups such as the Field Office Managers, or the Laboratory Directors Group, during their interactions with the Secretary or Under-Secretary. In other instances government-wide initiatives arise that are related to the ongoing work the Committee has performed within DOE. These issues have been referred to the Committee, often in addition to a more formal tasking to a specific Program Office, for consideration, investigation and report. In some cases individual Program Offices, through their representatives to the Committee have raised issues of concern to several offices. In other instances, when requested, representatives of the Committee participate in special departmental task forces.

The DSC has come to be seen as a source of valuable, integrating perspective particularly as to how headquarters initiatives can be best implemented in a way that accounts for the diversity and complexity of the various contractor implementing arrangements. The Committee generally operates on the basis of consensus and thus there are issues for which its consideration is better suited than others. The DSC interests and opinions are directed as much as possible at practices and outcomes. It tends to seek out examples of successful integration of standards-based safety and management and to explore more deeply and patiently into the contributing factors for success. Reportable factors must be those that can be of use to multiple program and field management users and thus DSC reports are based upon extensive multi-site and program interaction.

E. What is the relationship of the Department Standards Committee to the Department Directives Program in which standards and requirements are formally promulgated?

Since its inception the DSC has been the champion for a broad understanding of Astandards as the expressed expectation of performance. @ In this sense, the formal standards and requirements promulgated by the DOE Directives System represent a necessary but not sufficient subset of all the expectations that are needed to create and then execute a DOE mission contract. The DSC-developed *Criteria for the Department's Standards Program* is a comprehensive statement about the nature of information (i.e. expectations) flow in a fully integrated complex technological organization such as the DOE. It is a high-level description of the attributes of integration that is based upon the historic best-practices within the DOE. The *Criteria* also express the elements of a work and worker-centered approach to creating infrastructures for work design and work performance that can assure adequate protection of workers, the public and the environment.

The objective of the DSC with the *Criteria* is not to dictate the contents of the DOE Directives System. Rather the *Criteria* represent a systems level benchmark against which the Aas is@ condition of integration promoted by the actual published directives can be examined for their contributions or impediments to integration. Working under the concepts and principles expressed in the *Criteria*, multi-disciplinary DSC teams, representing several levels of DOE organization and multiple contractors have conducted a number of diagonal reviews of specific actual practices for integrated safety management at different sites. Typically these reviews assess effective practices at different stages in their development and provide a complementary basis of information about the potential effectiveness of ISM guided disciplines to that gathered from the more organization-focused, and across the board verification reviews or those conducted by the EH Office of Independent Oversight.

Used pro-actively, the *Criteria* provides a basis for the development of new systems for the improvement of integration. The *N&S Closure Process* was developed by the DSC to provide a common but reliable and robust mechanism for identification of sets of protection and management standards that could be tailored to the work of individual contracts. This process has proven extremely valuable in dealing with the Agraded application@ features found in a number of DOE Directives. The DSC has also provided a forum for other organizations within the DOE community that were developing new safety management mechanisms to present status reports on their initiatives and receive constructive feedback, shaped by *Criteria* principles.

F. What is the relationship of the Department Standards Committee to the Office of Contract Reform?

The DOE Contract Reform initiative represents the department=s response to a landmark initiative within the entire federal government. The principal connection between the DSC and the Office of Contract Reform has come through the involvement of DSC members, with reference to the *Criteria* in developing the Integrated Safety Management provisions of the modified DOE procurement regulations (48 CFR (DEAR) 970.5204-2, 5204-78) which express and implement the department=s *Performance-based contracting policy*. With significant changes to its contracting methodologies implemented well in advance of this policy, the Department has accumulated several years of experience with alternative contracting arrangements to its traditional Maintenance and Operating Contract.

Many of the sites impacted by these alternative approaches have been represented on the DSC and during the development of the *N&S Closure Process* for identification of work tailored standards, the Committee was aware of the need to shape its efforts to advance the *Criteria* principles by means of their direct utility toward integration in these new contract mechanisms. The process of fully implementing Integrated Safety Management together with Performance Based Contracts will continue for a number of years. The DSC is well positioned by virtue of its past activities to identify and investigate the various issues that arise as the Department moves to the next plateau of integration and accountability for performance.

G. What is the relationship of the Department Standards Committee to the Department=s interaction with the Defense Nuclear Facilities Safety Board?

The Defense Nuclear Facilities Safety Board provides independent oversight of a large subset of the hazardous activities attendant to the execution of the DOE mission. As an advisory group to the Secretary of Energy, the Board operates in a mode that differs from the traditional rule-based regulator. The Board, by law, is charged with evaluating the "standards" promulgated by DOE for the control of the nuclear and radiological hazards. Traditionally, like the DSC, the Board has also taken a broad position on range of activities that constitutes standard-setting. Since its formation in 1989, this has led the Board to provide a number of formal recommendations for action to the Secretary of Energy that range from specific technical issues to items of management significance to all defense nuclear facilities.

During the past decade the Board has, by its own account, been an "action forcing" agency. A significant consequence of the Board's activities has been challenges to the adequacy or effectiveness of DOE standards that apply to more than just defense nuclear facilities. The DSC was created in part to provide a forum in which all program, field management and contractors could compare notes and examine the impact of the more sweeping Board recommendations on non-defense activities. The DSC has participated in the continuing dialogue with the Board on these recommendations and members of non-defense program organizations have worked to determine effective solutions to common problems and to aid in representing to the Board those situations in which the Department has chosen means of implementing Board recommendations intended to permit department-wide response that remained flexible to permit tailored application to the differing work of each major Program Office. This interaction has not been without contention or disagreement. However, the DSC has been instrumental in promoting constructive, technically thorough, and mission-appropriate responses to issues and concerns raised by the Board.